



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/709,722	11/13/2000	Chiyoaki Iijima	107263	4658

25944 7590 11/14/2002

OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

NGUYEN, FRANCIS N

ART UNIT PAPER NUMBER

2674

DATE MAILED: 11/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/709,722

Applicant(s)

IIJIMA ET AL.

Examiner

FRANCIS NGUYEN

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,9 and 10 is/are rejected.
- 7) ☒ Claim(s) 3-8, 11-16, 19, 20-22 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other:

DETAILED ACTION

Claim Objections

1. Claim 22 is objected to because of the following informalities: incorrect word "claims" (page 27, claim 22, line 2). Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-2, 9-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Mizutome et al. (US Patent 6,037,920).

As to **claim 1**, Mizutome et al. discloses a liquid crystal driving method for a liquid crystal panel (see Abstract, column 1, lines 36-41) having a liquid crystal between a pair of electrodes (in which optical characteristics of the liquid crystal are changed by applying a driving signal between the pair of electrodes (column 1, lines 50-54), comprising the steps of

Art Unit: 2674

sensing a temperature of at least one of the liquid crystal panel and an environment in which the liquid crystal panel is disposed (**thermistor 102 detecting temperature of LCD 101**, column 2, lines 65-67),

applying a low frequency signal as the driving signal at a low temperature based on the sensed temperature, the low frequency signal being lower than a frequency signal used at normal temperature (column 4, lines 22-52, **frequency 7-26 Hz for temperature range 5-30 deg C** column 6, lines 20-24).

As to **claim 2**, see the same citations for claim 1. The liquid crystal panel driving method according to claim 1, further comprising applying a high frequency signal as the driving signal at a high temperature based on the sensed temperature(**frequency 14-20 Hz for temperature range 30-40 deg C**, column 6, lines 20-24).

As to **claim 9**, Mizutome et al. discloses a liquid crystal device comprising a liquid crystal panel having a liquid crystal between a pair of substrates (column 1, lines 44-49) and a driving circuit (**drive voltage generation circuit 104, scanning electrode circuit 103a and a data electrode drive circuit 103b** , column 3, lines 23-25) that applies a driving signal between the pair of substrates and that varies optical characteristics of the liquid crystal, the liquid crystal device comprising:

a temperature sensor that senses a temperature of at least one of the liquid crystal panel and an environment in which the liquid crystal panel is disposed (**thermistor 102 attached onto liquid crystal panel 101**, column 2, lines 65-67); and

Art Unit: 2674

temperature compensating device (**panel control circuit 105 controls time of application** column 4, lines 61-67) that applies a low frequency signal as the driving signal at a low temperature based on the sensed temperature obtained by the temperature sensor, the low frequency signal being lower than a frequency signal used at the normal temperature(**low frequency 7-26 Hz for low temperature range 5-30 deg C** column 6, lines 20-24).

As to **claim 10**, see the same citation for claim 9. The liquid crystal device according to claim 9, the temperature compensating device applying a high frequency signal as the driving signal at a high temperature, the high frequency signal being higher than the frequency signal used at the normal temperature (**high frequency 14-20 Hz for high temperature range 30-40 deg C**, column 6, lines 20-24).

Allowable Subject Matter

3. Claims 3-8 , 11-16, 17-18, 19, 20-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to **claims 3-8**, none of prior art teaches the liquid crystal panel driving method for a liquid crystal panel having a liquid crystal between a pair of electrodes (in which optical characteristics of the liquid crystal are changed by applying a driving signal between the pair of electrodes , **further comprising varying a frequency of the driving signal discontinuously with respect to the sensed temperature.**

As to **claims 11-16 and 19**, none of prior art teaches a liquid crystal device comprising a liquid crystal panel having a liquid crystal between a pair of substrates (column 1, lines 44-49) and a

Art Unit: 2674

driving circuit that applies a driving signal between the pair of substrates and that varies optical characteristics of the liquid crystal, the temperature compensating device discontinuously varying a frequency of the driving signal with respect to the sensed temperature.

As to **claims 17-18**, none of prior art teaches a liquid crystal device comprising a liquid crystal panel having a liquid crystal between a pair of substrates and a driving circuit, that applies a driving signal between the pair of substrates and that varies optical characteristics of the liquid crystal, the temperature compensating device setting a driving frequency of each pixel of the liquid crystal panel to not greater than 1.28kHz when the temperature is -20 deg C and to not greater than 2.56khz when the temperature is +25 deg C.

As to **claim 20**, none of prior art teaches the liquid crystal device device comprising a liquid crystal panel having a liquid crystal between a pair of substrates and a driving circuit that applies a driving signal between the pair of substrates and that varies optical characteristics of the liquid crystal, the temperature compensating device is a synchronizing signal frequency varying device that varies a frequency of the driving signal by varying a frequency of a synchronizing signal applying to a liquid crystal drive control circuit for controlling the driving circuit based on the sensed temperature.

As to **claims 21-22**, none of prior art teaches the liquid crystal device comprising a liquid crystal panel having a liquid crystal between a pair of substrates and a driving circuit that applies a driving signal between the pair of substrates and that varies optical characteristics of the liquid crystal, the temperature sensor being a thermistor formed together with the driving circuit in a semiconductor device. It is noted that Mizutome et al. only suggests that thermistor be attached externally onto the liquid crystal panel or incorporated within the liquid crystal panel.

Art Unit: 2674

Conclusion

4. The prior art made of record but not relied upon , but pertinent to Applicant's disclosure:

US Patent	Mori et al.	5,903,251
-----------	-------------	-----------

US Patent	Koshobu et al.	5,929,833
-----------	----------------	-----------

Reference Mori et al. is made of record as it discloses a driving voltage variable according to detected temperature.

Reference Koshobu et al. is made of record as it discloses a liquid crystal display having temperature-dependent element drive timing.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **FRANCIS N NGUYEN** whose telephone number is **703 308-8858**. The examiner can normally be reached during hours 8:00 AM- 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **RICHARD A HJERPE** can be reached at 703 305-4579.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Art Unit: 2674

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service whose telephone number is (703) 306-0377.



FN

November 7th, 2002

FRANCIS N NGUYEN

Examiner

Art Unit 2674